

1           1. An electronic speed control system for a farm machine comprising:  
2           at least one left wheel and one right wheel installed on a farm machine, with  
3 each wheel connected to and powered by a variable speed, reversible, hydraulic  
4 motor;  
5           a variable output and reversible hydraulic pump connected to each hydraulic  
6 motor and driven by an engine on board the farm machine, with each hydraulic  
7 pump capable of being set to drive its connected motor forward or reverse or into  
8 neutral with no motion and of varying the motor speed in forward and reverse by  
9 varying the pump output;  
10          a pump control device connected to each hydraulic pump to select between  
11 forward, reverse, and neutral pump setting and to vary the output of the pump in the  
12 forward and reverse settings;  
13          a speed control device connected to both pump control devices and capable  
14 of simultaneously varying the settings and outputs of both pumps;  
15          a speed control power apparatus connected to the speed control device and  
16 capable of moving the speed control device to vary the outputs of both pumps;  
17          a microprocessor interconnected with the speed control power apparatus and  
18 providing a signal to the speed control power apparatus to determine the motion  
19 imparted to the speed control device based upon a program of the microprocessor  
20 and the readings of sensors interconnected with the microprocessor and providing  
21 signals to the microprocessor that indicate the status of parameters of the farm  
22 machine; and

1 a speed control position sensor interconnected with an operator controlled  
2 manual speed control and with the microprocessor and sending a signal to the  
3 microprocessor indicating at what speed setting the manual speed control is set.

4 2. The electronic speed control system of claim 1 wherein the operator  
5 controlled manual speed control is a pivoted lever.

6 3. The electronic speed control system of claim 1 wherein the speed control  
7 power apparatus is a hydraulic cylinder connected to and operated by a control  
8 valve connected to and receiving signals from the microprocessor.

9 4. The electronic speed control system of claim 1 wherein the pump control  
10 devices are control arms connected to the pumps and to the speed control rod.

11 5. The electronic speed control system of claim 1 wherein the speed control  
12 device is a rod connected between the pump control devices and the speed control  
13 power apparatus.

14 6. The electronic speed control system of claim 1 wherein the speed control  
15 position sensor is a dual hall effect rotary position sensor.

16 7. The electronic speed control system of claim 1 wherein the ground speed  
17 sensor means is a reluctance sensor on each wheel.

18 8. The electronic speed control system of claim 1 wherein the engine speed  
19 sensor is a magnetic sensor.